






# UVD-XP4DNR(-P) Camera User Manual

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# Content

Preface	3
Safety terms	3
<b>Product description</b>	<b>4</b>
Features	4
User guidelines	4
Components	5
OSD control pad	6
<b>Installation</b>	<b>6</b>
Cable connection	6
Camera installation	7
Angle adjustment	7
Focus adjustment	7
Connect the monitor	8
<b>Programming</b>	<b>9</b>
Main menu	9
Presets menu	10
Setup menu	10
Viewing menu	13
Exposure menu	13
White balance menu	14
Save/restore menu	15
<b>Menu Map</b>	<b>18</b>



## Preface

This is the UVD-XP4DNR(-P) Camera. This document includes an overview of the product and detailed instructions explaining:

- how to connect the camera; and
- how to program the camera.
- how to adjust the camera angle and focus

To use this document effectively, you should have the following minimum qualifications:

- a basic knowledge of CCTV systems and components; and
- a basic knowledge of electrical wiring and low-voltage electrical connections.

**Note:** A qualified service person, complying with all applicable codes, should perform all required hardware installation.

## Safety terms

These terms may appear in this manual:

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**CAUTION:** Cautions identify conditions or practices that may result in damage to the equipment or other property.

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**WARNING:** Warnings identify conditions or practices that could result in equipment damage or serious personal injury.

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# Product description

The UVD-XP4DNR(-P) (rugged dome) color video cameras is a 24 VAC/12 VDC model. The cameras are equipped with a digital signal processor (DSP) for processing the video signal.

## Features

Camera features include:

- Next-generation XPosure technology.
- Improved low-light performance and color balance.
- 540 TVL lines color.
- Dynamic range 95 dB (typical), 120 dB (maximum).
- Preset modes optimized for various environments.
- On-screen display interface.

## User guidelines

Use the following guidelines:

- Program as many camera settings as possible before mounting the camera. Take appropriate safety precautions while completing programming after installation.
- Always use a 12 VDC or 24 VAC UL listed Class 2 power supply to power the camera.  
  
Do not use the camera outside the temperature range specifications: -22 to 122°F (-30 to +50°C).
- If the light source where the camera is installed experiences rapid, wide-variations in lighting, the camera may not operate as intended.

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**WARNING:** To reduce the risk of fire or electronic shock, do not expose the camera to rain or moisture and do not remove the cover or back.

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## Components

Figure 1 shows the main components of the rugged dome unit.

**Figure 1: Rugged dom2e unit**

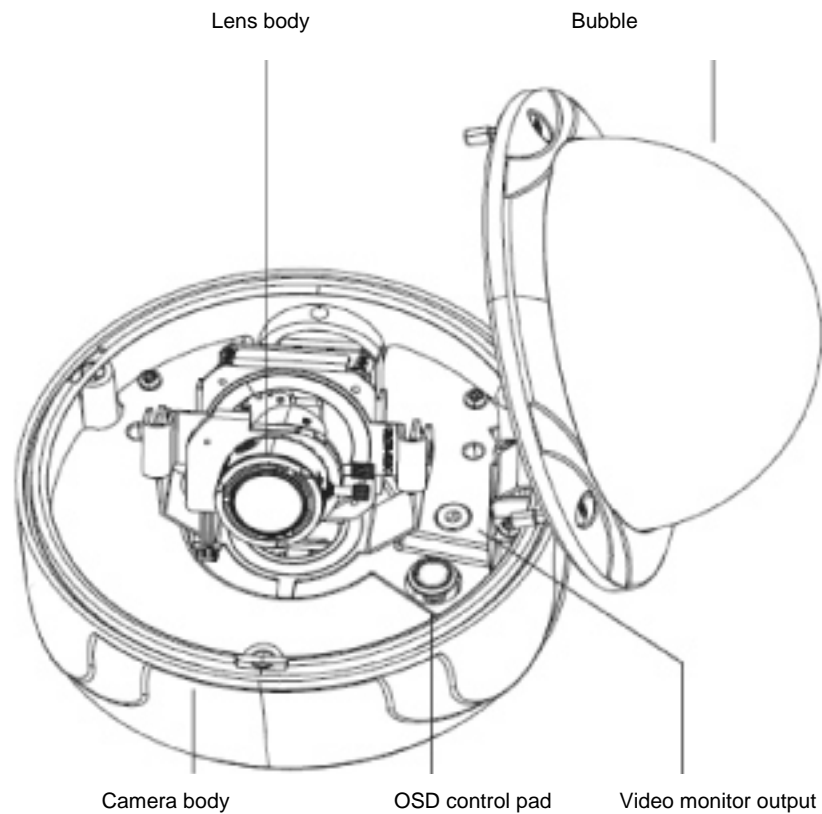
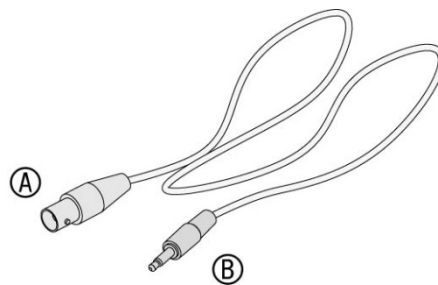


Figure 3 shows the monitor output components.

**Figure 2: Monitor output cable**



A. Monitor output BNC

B. Monitor output RCA

Plug the monitor output RCA into the video monitor output and connect the monitor output BNC to the TV monitor.

## OSD control pad

The on-screen display (OSD) control pad (Figure 4) is a five-direction joystick that provides the ability to manually control the camera functions. Table 1 below lists the OSD control pad functions and describes their use.

Figure 3: OSD control pad

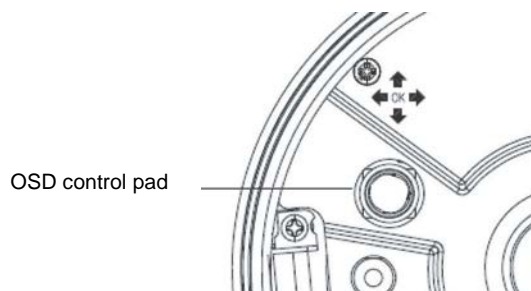


Table 1: OSD control pad controls

Pad directions	Description
Up	Moves the cursor upward to select an item
Left	Moves the cursor left to select or adjust the parameters of the selected item.
Right	Moves the cursor to the right to select or adjust the parameters of the selected item.
Down	Moves the cursor downward to select an item.
Enter	Press the center of the control pad to display the <i>Setup menu</i> . If the selected item has its own menu, press the control pad to enter a submenu. Press the control pad for 2 seconds to save all settings and exit the <i>Setup menu</i> .

## Installation

This chapter provides information on how to install the camera and adjust camera angle and focus.

To install the camera you will need to prepare the mounting surface, make cable connections, and mount the camera.

### Cable connection

To make cable connections, do the following:

1. Connect a coaxial cable from the camera's BNC connector to a CCTV monitor or video recording device.
2. Connect a 12 VDC or 24 VAC power supply to the power input. The label on the camera gives the following information:

**Red cable.** Power in.

**Black cable.** Power in.

**White cable.** Video out.



**Black cable.** Video ground.

**Note:** For AC24V or DC12V, Black or Red may be used for ground.

## Camera installation

To mount the camera, attach the camera to the mounting surface using the appropriate fasteners.

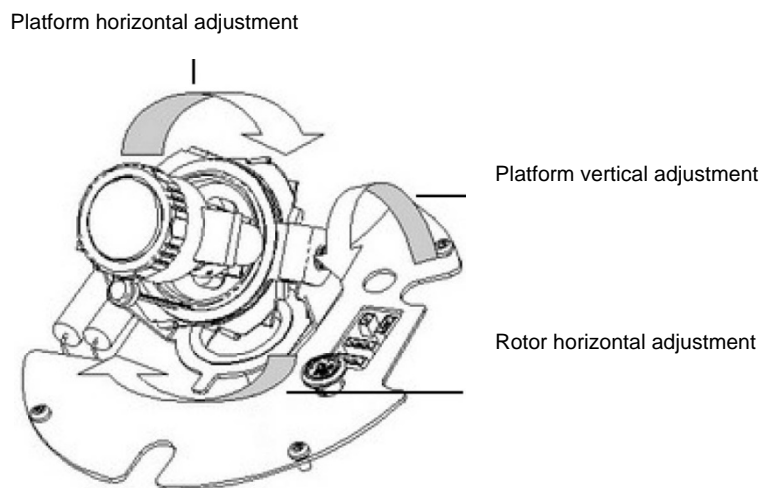
## Angle adjustment

To adjust the horizontal angle of the platform up to 180 degrees, turn the platform (Figure 4 below).

To adjust the horizontal angle of the rotor up to 350 degrees, turn the rotor on the platform (Figure 4 below).

To adjust the vertical angle of the platform up to 90 degrees, turn the platform (Figure 4 below).

**Figure 4: Camera adjustment**



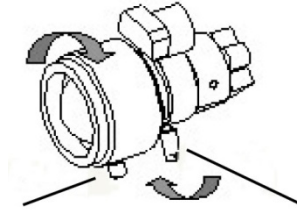
## Focus adjustment

To adjust the camera zoom and focus, see Figure 5 on page 8 and do the following:

1. Loosen the zoom ring thumbscrew.
2. Turn the zoom ring to set the desired zoom.
3. Tighten the zoom ring thumbscrew.
4. Loosen the focus ring thumbscrew.
5. Turn the focus ring to set the desired focus.
6. Tighten the focus ring thumbscrew.

**Figure 5: Zoom and focus adjustment**

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Zoom ring thumbscrew for VA2 and focus ring for  
VA9 lens

Focus ring thumbscrew for VA2 and zooming ring  
for VA9 lens

## Connect the monitor

Program the cameras by attaching a standard video monitor to the system.

To connect the monitor, do the following:

1. Plug the monitor output cable (Figure 2 on page 5) to the video monitor output connector (Figure 1 on page 5).
2. Connect the BNC cable to the video monitor.
3. Press Enter (see OSD control pad on page 9) to display the Setup menu.

# Programming

This chapter describes how to navigate the setup menus to adjust the camera settings.

## Main menu

The camera is configured through the setup menus that appear on-screen (see Figure 6 below).

To access and navigate the main menu, press and hold the Enter button (See Figure 3 on page 6). Use the up or down buttons to move between items, and press the Enter button to select that item. Use the left and right buttons to select the different options available for the item.

There is a menu map on the back page of the manual that shows the overview of the menu structure (see “Menu Map” on page 18).

**Figure 6: Main menu**

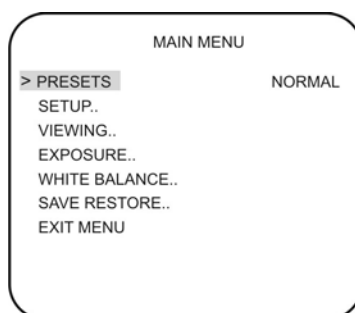


Table 1 lists the main menu options.

**Table 2: Main menu options**

Menu option	Function
Presets	Configures the preset for the lighting condition.
Setup	Configures camera ID, motion detection, and wide dynamic range options.
Viewing	Configures flip and resolution.
Exposure	Configures automatic gain control (AGC), AE preferences, shutter limit, frame report, and B/W control.
White balance	Configures automatic white balance (AWB) mode, and auto tracking white balance (ATW).
Save/restore	Saves user settings, restores user settings, and restores factory settings.
Exit Menu	Exits the OSD menu system and returns to live mode.

When in a submenu, you can easily move back to a previous menu, save changes as well as cancel changes and return to live mode. Select one of these options:

Prev.	Returns to the previous menu.
Save	Saves changes.
Cancel	Cancels and returns to live mode.

## Presets menu

Table 2 lists the presets for common lighting conditions. Select the option that suits your camera's situation.

**Table 3: Preset menu options**

Menu option	Description
Normal	This is the camera default preset for general lighting conditions out of the box. This mode supports 14 bits of dynamic range and gives priority to rendering the highlights in the scene.
Indoor	This preset supports 16 bits of dynamic range and gives priority to rendering the shadows in the scene. It is primarily used for typical indoor scenes and when you want to see backlit objects clearly in front of bright backgrounds (as in a building lobby, for example).
Outdoor	This preset offers the highest dynamic range of 17 bits and gives priority to rendering the highlights in the scene. This mode produces flatter images than modes with lower dynamic range.
Flickerless	Internally generated sync that reduces flicker under fluorescent lighting.
Custom	Whenever any menu items are changed, Custom will be displayed.

## Setup menu

From the Main menu, use the arrow buttons to select Setup and press the Enter button. The Setup menu screen appears.

**Figure 7: Setup menu**

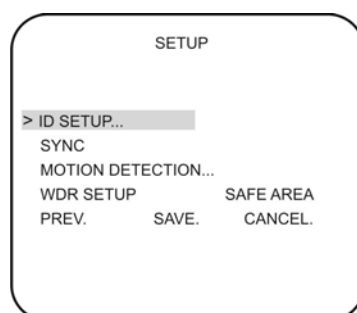


Table 4 on page 11 lists the main menu options.

Table 4: Setup menu options

Menu option	Description
ID setup	Configures camera identification and position. See “Camera ID setup” below for setup information.
Sync	Select one of the two options: <b>INT</b> - Internal Synch. This is used with DC Power Input as a way to reduce the phase roll of fluorescent lights. <b>LL</b> - Line Lock. This is used to synch video for AC Power Input so that the synch matches the frequency of the power input. This will completely eliminate the roll caused by fluorescent lights.
Motion detection	Configures detection threshold, PTZ settings, and the location and size of the detection zone. See “Motion detection” on page 12 for setup information.
WDR setup	Configures wide dynamic range (WDR). WDR allows you to see details of objects in shadows or details of objects in bright areas of frames that have high contrast between light and dark areas. Select one of the options: Safe area, ATM, Lower 1/3, or WD Normal.

### Camera ID setup

From the Setup menu, use the arrow buttons to select ID setup and press the Enter button. The Camera ID Setup menu screen appears.

Figure 8: ID setup menu

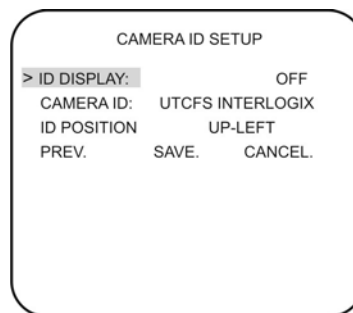


Table 5 below lists the Camera ID setup menu options.

Table 5: Camera ID setup menu options

Menu option	Description
ID display	Select on or off.
Camera ID	Defines the camera name. Press the <b>right</b> button to move the cursor to edit the camera ID. Use the <b>right</b> or <b>left</b> buttons to cycle through the character options and the <b>Enter</b> button to select. When complete, use the <b>up</b> or <b>down</b> buttons to leave the editing field.
ID position	Defines where on-screen the camera name is displayed. Select one of the position options: Up-Left, Up-Center, Up-Right, Down-Left, Down-Right.

Motion detection

A motion detection alarm refers to an alarm triggered when the camera detects a motion.

From the Setup menu, use the arrow buttons to select Motion detection and press the Enter button. The Motion Detection menu screen appears.

Figure 9: Motion detection menu

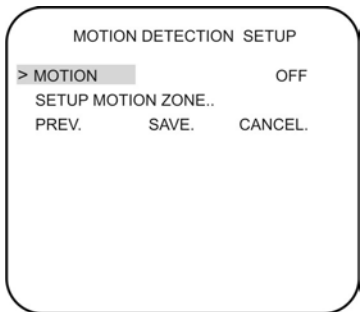
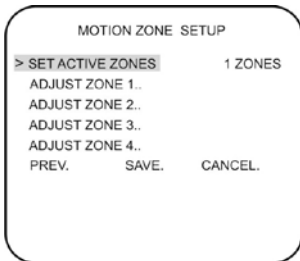


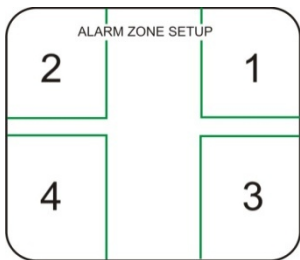
Table 6 below lists the Motion Detection Setup menu options.

Table 6: Motion Detection setup menu options

Menu option	Description
Motion	Enable or disable the motion detection option.
Set motion zone	Defines the on-screen area to trigger a response to motion. Up to four zones can be set. Select <i>Setup motion zone</i> to open the menu. This menu lets you select the location and size of the detection zone.



Use *Set active zones* to select the desired number of zones to be set on screen. Select the zone to be modified using *Adjust zone....* This screen appears with four boxes with the selected zone in a white frame:



Use the arrow buttons to move and size each box. The color of the box determines whether the size or position changes when the arrows are pressed. When completed, press Enter for a couple of moments to return to the previous screen.

# Viewing menu

From the Main menu, use the arrow buttons to select Viewing and press the Enter button. The Viewing menu screen appears.

Figure 10: Viewing menu

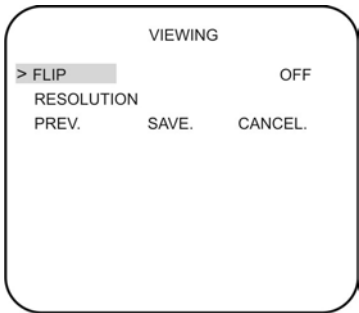


Table 7 below lists the Viewing menu options.

Table 7: Viewing menu options

Menu option	Description
Flip	Flips the camera image so that it is correctly orientated for viewing. Select one of the options: Off, Horizontal, Vertical, or Both.
Resolution	Configures resolution. Select High or Normal option. The High option oversharpens the image for higher resolution.

# Exposure menu

From the Main menu, use the arrow buttons to select Exposure and press the Enter button. The Exposure screen appears.

Figure 11: Exposure menu

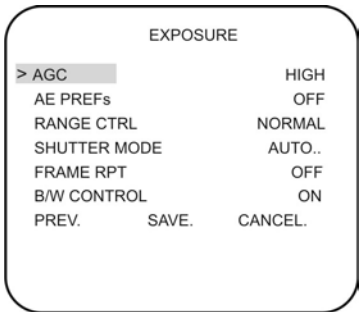


Table 8 lists the Exposure setup options.

Table 8: Exposure menu options

Menu option	Description
AGC	Configures automatic gain control (AGM). The image quality is automatically adjusted in low light conditions. Select one of the options: Medium, High, Custom, or Low.
AE preferences	When enabled, it automatically optimizes the image for highlights or shadows.
Range control	Select one of the options: Low, Normal, Medium, High, Custom. If Custom is selected, adjust the bias and limit options.
Shutter mode	Configures shutter limit. Select one of the options: X2, X4, X8, X16, X32, or Off.
Frame RPT	Configures the frame repeat. Select Off, 2X, or Freeze.
B/W control	Enable or disable day/night mode. Enable the option for automatic day/night control. Disable for color-only mode (day mode).

## White balance menu

From the Main menu, use the arrow buttons to select White balance and press the Enter button.

Figure 12: White balance menu

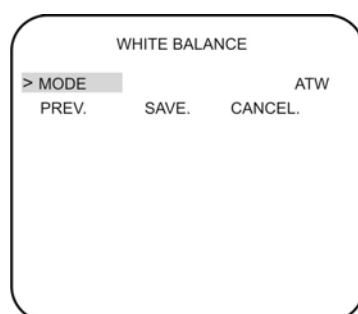
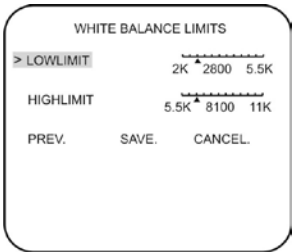
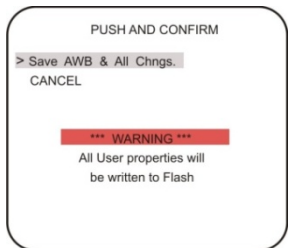


Table 9 below lists the White Balance menu options.

Table 9: White balance menu options

Menu option	Description
Mode	<b>ATW</b> (Auto tracking white balance) - The default white balance range of the XP4 camera is between 2800 and 7500 Kelvin depending on the color temperature of the scene illumination. It can be manually adjusted to between 2000 and 11000 Kelvin.



Menu option	Description
	 <p><b>PTL</b> – Saves the AWB (Automatic white balance) value and all changes made.</p> 
	Use this option with care.

## Save/restore menu

From the Main menu, use the arrow buttons to select Save/restore and press the Enter button.

Figure 13: Save/restore menu



Table 10 below lists the Save/restore menu options.

Table 10: Save/restore menu options

Menu option	Description
Save user settings	Saves all current changes.
Restore user settings	Discards all current changes since the last time “Save user Settings” was used.
Restore factory settings	Resets all settings to factory default.
Reset camera	Performs camera reset.
Prev.	Returns to previous menu.





# Menu Map

